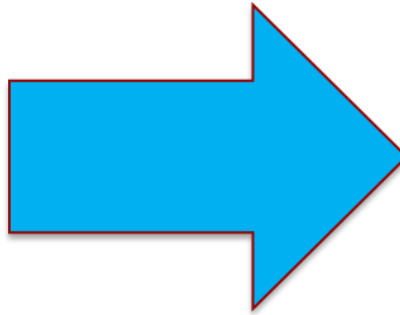


Communicating Climate Change in an Uncertain and Pre-Occupied World

Jim Fox
UNC Asheville's NEMAC

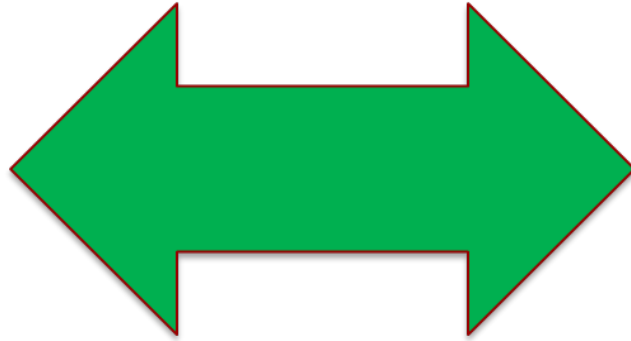
November, 2010

Communication, **One Way** or Two Way?



- Information dissemination
- Education and outreach
- From trusted sources of information

Communication, One Way or **Two Way**?



Two way conversation and customized to support:

- Planning for climate change **adaptation** and mitigation
- Decision making
- Implementation



Consistent

Clear &
Compelling

Actionable



EPA Southeast Climate Change Adaptation Planning Workshop (Feb. 2010)

Recommendations

- Develop an education and outreach role on climate change that is clear and understandable
- Create a climate change information clearinghouse for the Southeast
- Conduct coordinated vulnerability assessments
- Define priorities
- Develop adaptation policies

Consistent

Clear &
Compelling

Actionable



Progress Report of the Interagency Climate Change Adaptation Task Force (Oct. 2010)

Recommendations

- Focus on vulnerability and resilience
- Inform State Agencies and can be acted upon locally
- Integrated across sectors and updateable
- Engage key stakeholders and use a transparent process
- Coordinated across scales, sectors and stakeholders
- Apply risk-management methods and tools
- Prioritizes the most vulnerable resources
- Maximize mutual benefits

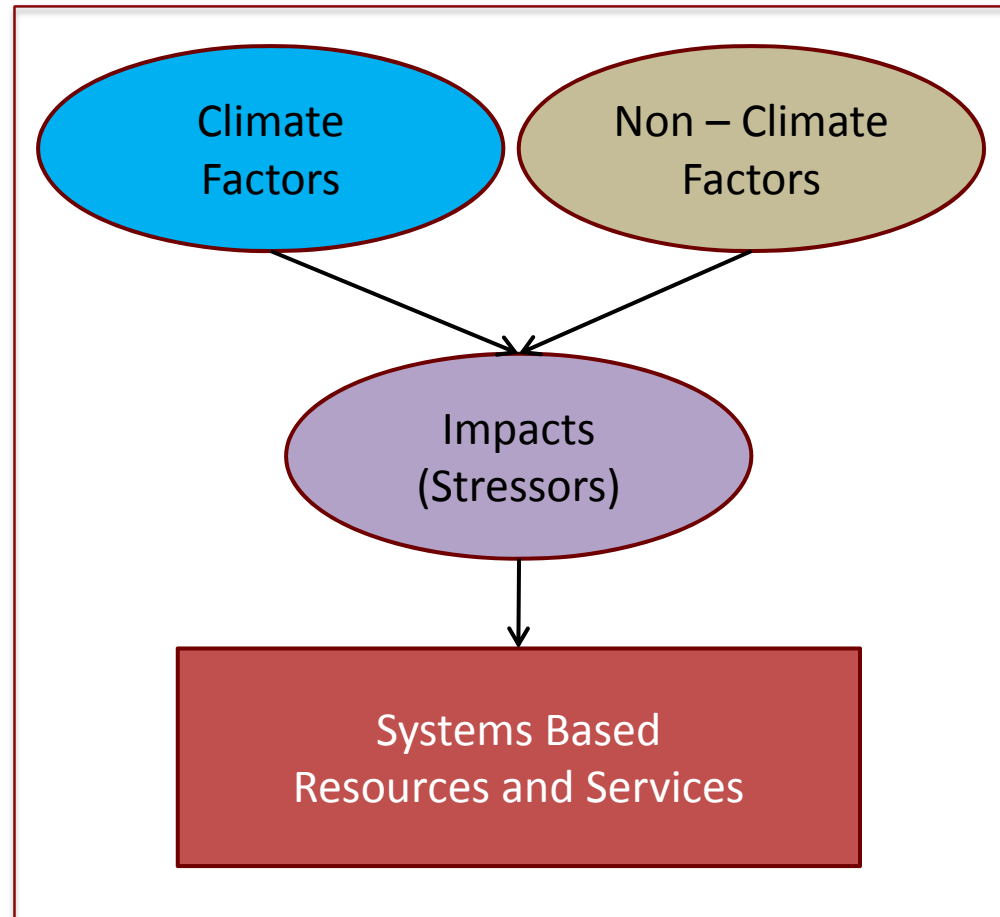
Consistent

Clear &
Compelling

Actionable

A WORKING PROTOTYPE TOWARDS: FRAMEWORK FOR CLIMATE ASSESSMENTS

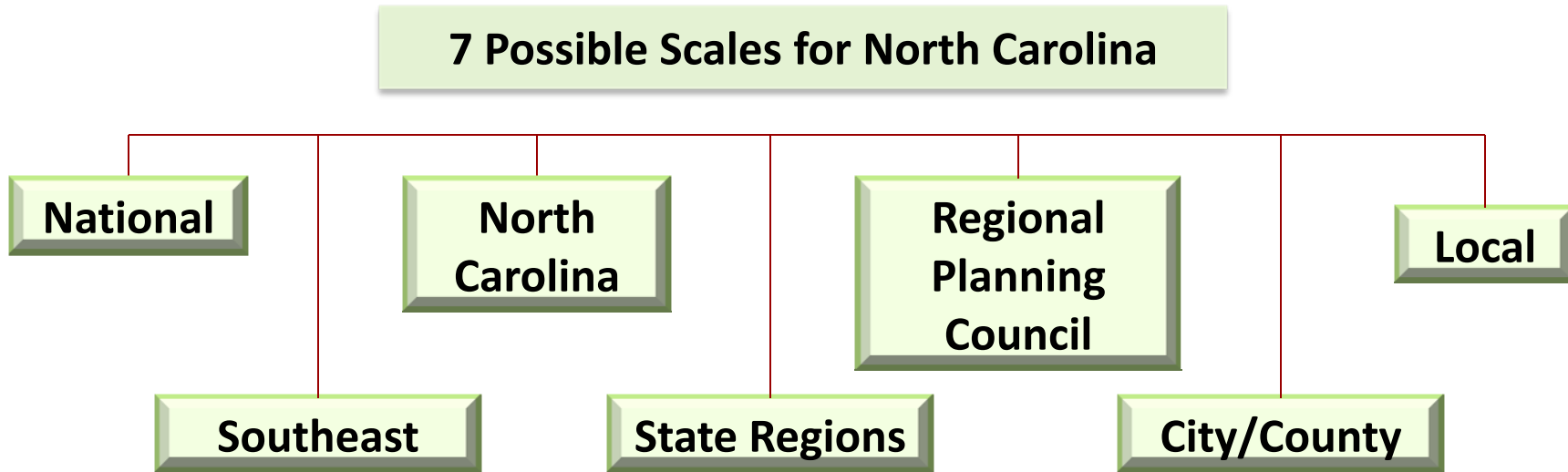
- Scale and sector specific
- Designed so that the information can be accessed from a variety of scales
- Leads to recognition and understanding of **vulnerability**
- First step, but important building block



Consistent

SCALE

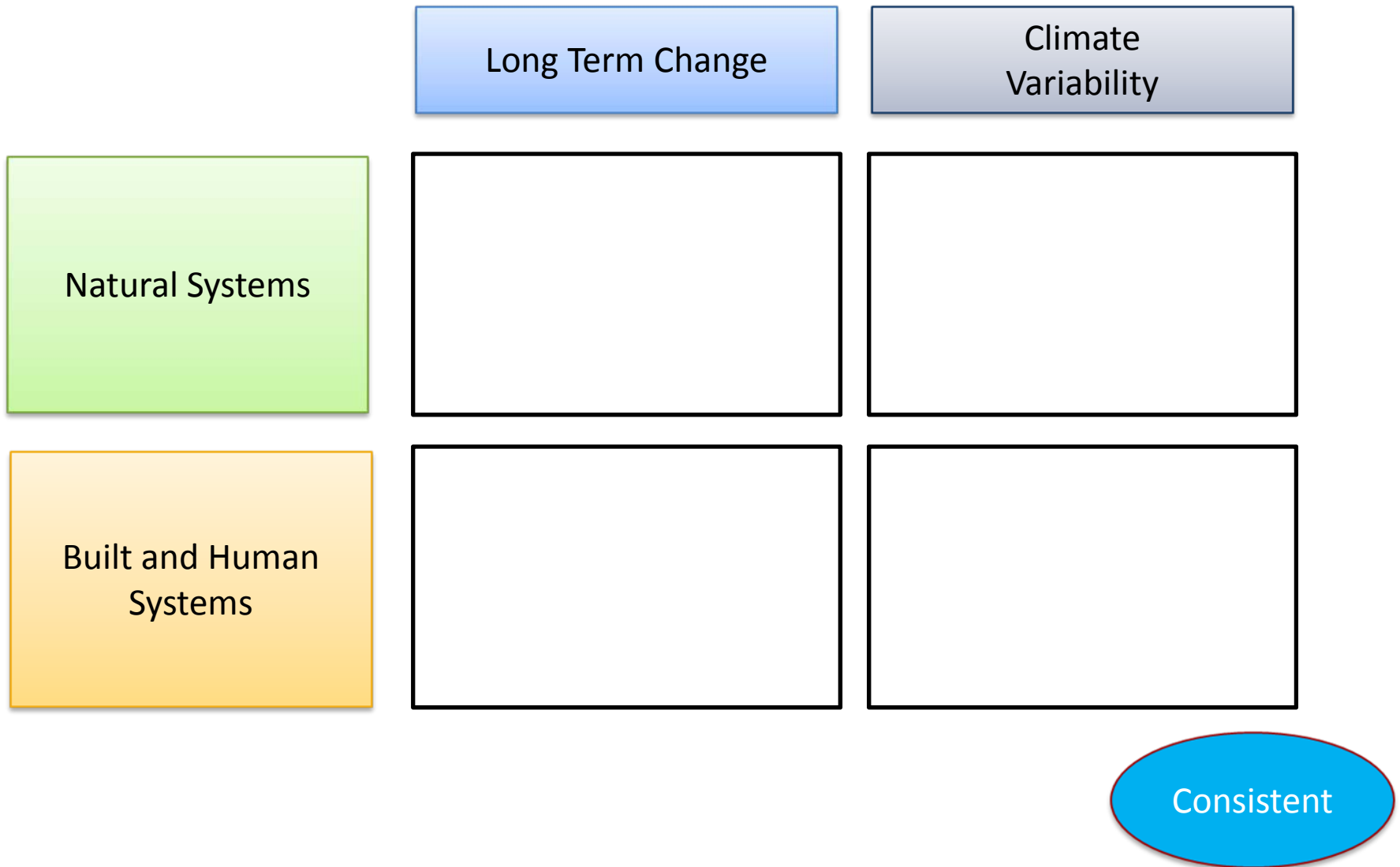
- Scale = Decision + Decision Maker



Consistent

Impacts of Climate Change on Southern Appalachians

How do we balance our approach?



Impacts of Climate Change on Southern Appalachians

How do we balance our approach?

	Long Term Change	Climate Variability
Natural Systems		
Built and Human Systems		

“Climate trains the boxer, weather delivers the punches.”
Deke Arndt, 2010

Consistent

Downtown Asheville Engagement Site

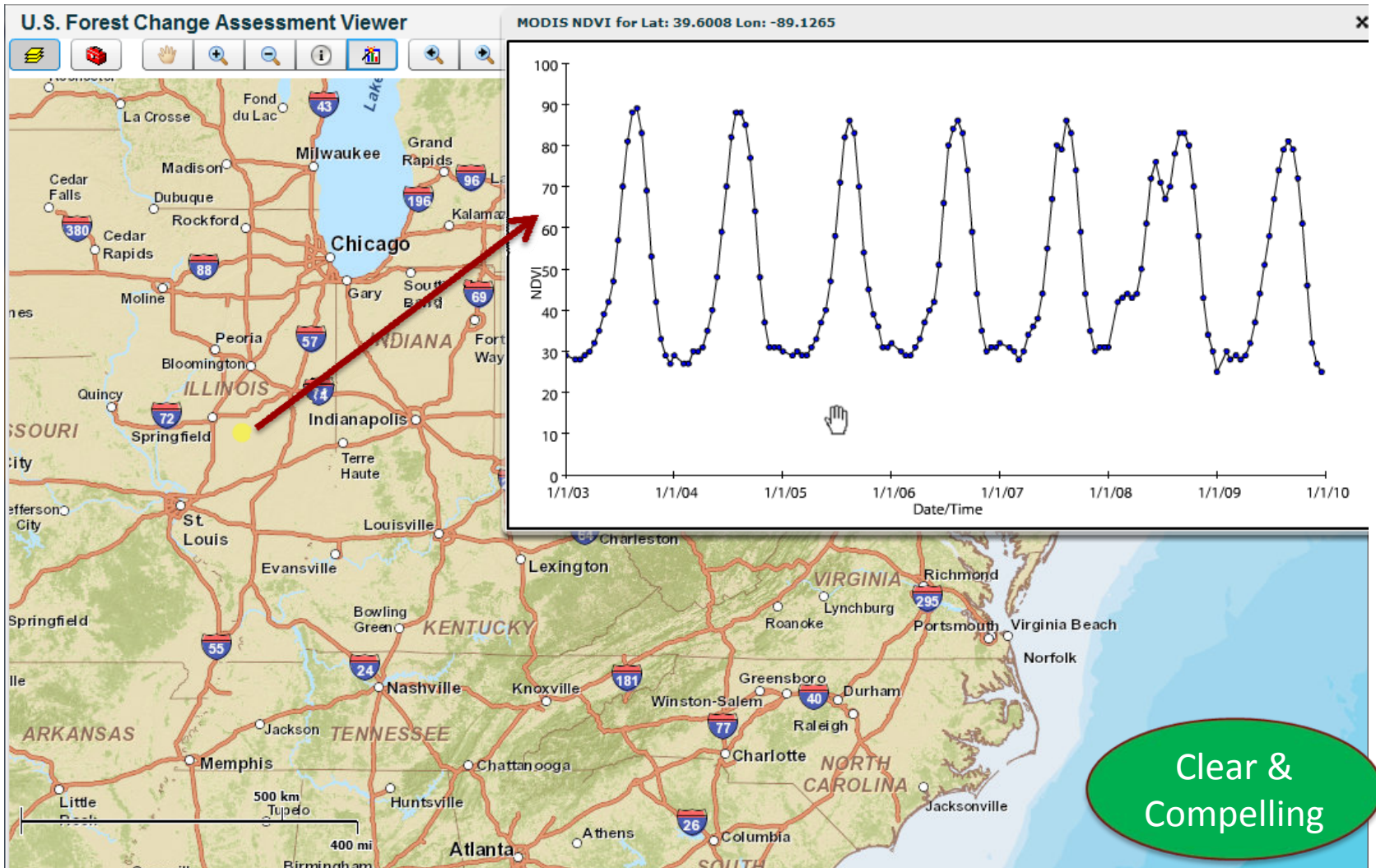
RENCI at UNC Asheville



Clear & Compelling

Forest Change Assessment Viewer

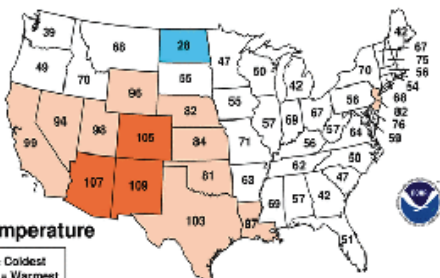
generate graphs of NDVI data





US State of the Climate May 2009

Temperature Ranks (F) January - May 2009



Temperature

1 = Coldest
115 = Warmest



May 2009 was the 3rd coolest in the century

Report and Regional Highlights

Temperature Highlights- May

Six states had below normal temperatures...

Precipitation Highlights- October

This was the 22nd wettest May in the...

Other Items of Note

The Red River at Fargo, ND set...

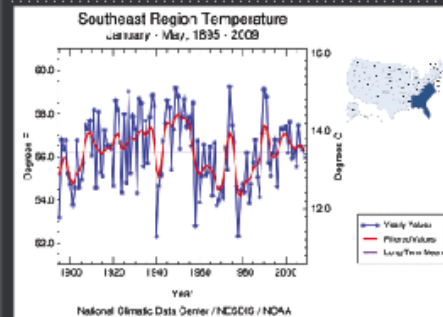
Alaska Temperature and Precipitation

Unusually warm temps in Alaska...

Regional Highlights

On the regional level, much of the...

Temperature and Precipitation Time Series



Temperature

Statewide Temperature Time Series

Choose a State

Regional Temperature Time Series

Choose a Region

Precipitation

Statewide Precipitation Time Series

Choose a State

Regional Precipitation Time Series

Choose a Region

Maps and Graphics

Temperature

Precipitation

Wildfire

Hurricanes

Tornadoes

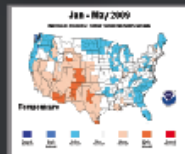
Snow & Ice

Sea Surface

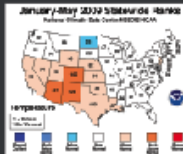
Drought

Temperature Ranks

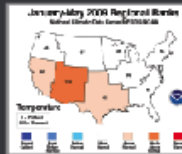
3months
6months
12months
Year-to-Date
Departure from Normal



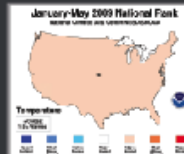
Divisional Temperature Ranks
Jan - May 2009



Statewide Temperature Ranks
Jan - May 2009



Regional Temperature Ranks
Jan - May 2009



National Temperature Ranks
Jan - May 2009

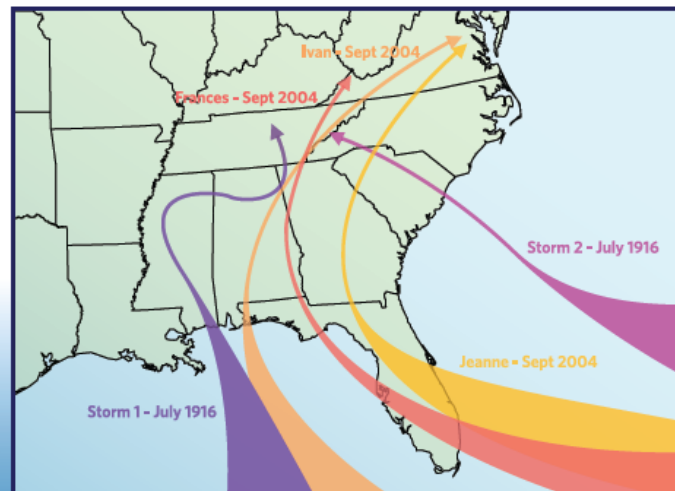
Clear & Compelling

FLOODING & HURRICANES

Separated by 88 years, but the results were the same – major floods in Western North Carolina associated with the remnants of multiple hurricanes that arrived in rapid succession.

In 1916, two hurricanes dumped more than 20 inches of rain across the state (State record set at Altapass, Mitchell County – 22.22" in 24 hours). The rain was concentrated by orographic uplift over the Appalachian Mountains. After the second storm, all the rivers were in flood and there was major destruction. Recent clearing of forests in the area caused major landslides and the debris caught behind bridges and caused them to wash away. Almost all of the rail bridges were destroyed. Damage was estimated at \$22 million (in 1916 dollars) and 80 people lost their lives.

In 2004, three hurricanes had a similar effect. Frances, Ivan and Jeanne flooded many communities, with major damage and loss of life in Canton, Waynesville and Asheville.

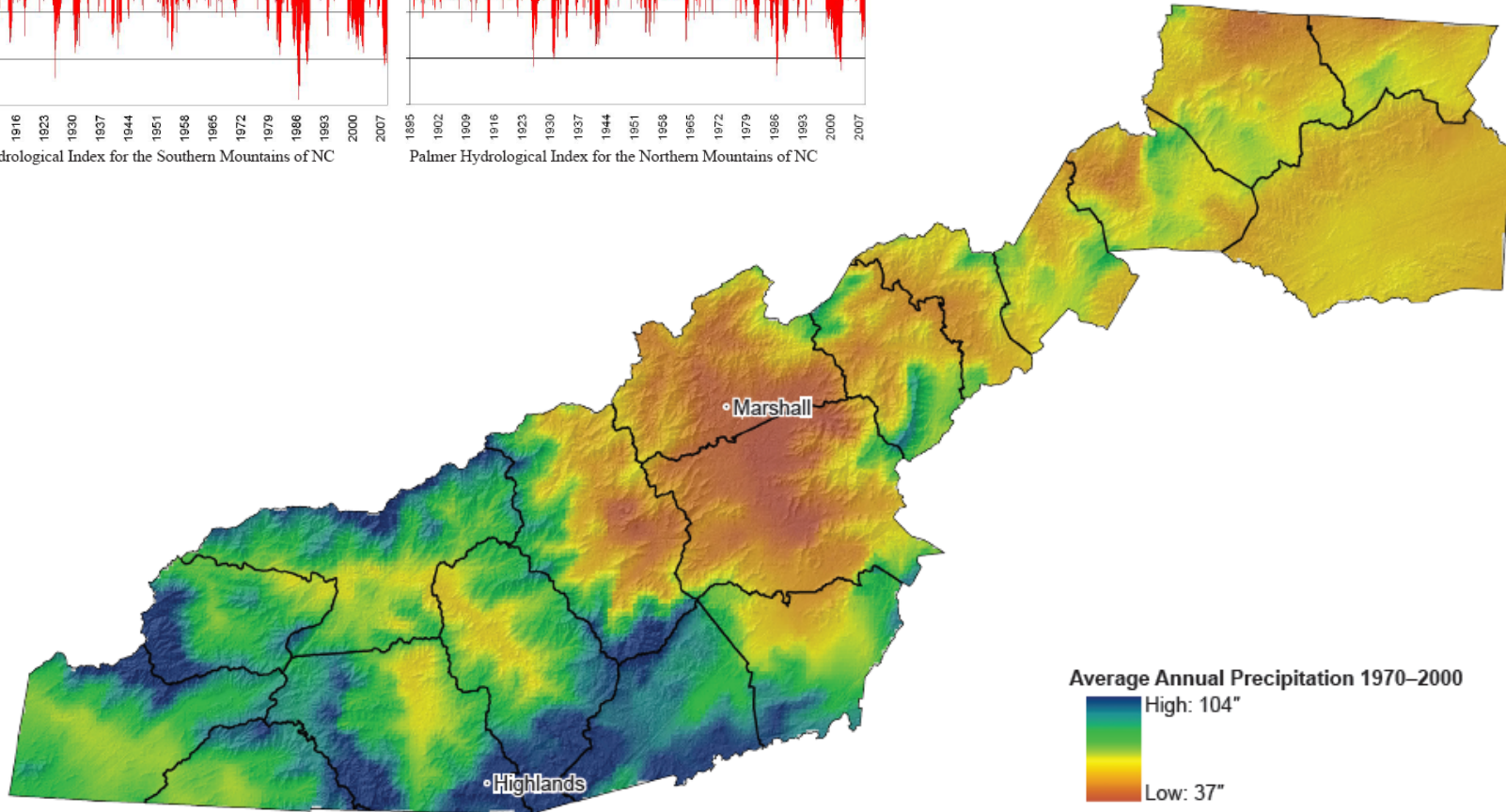
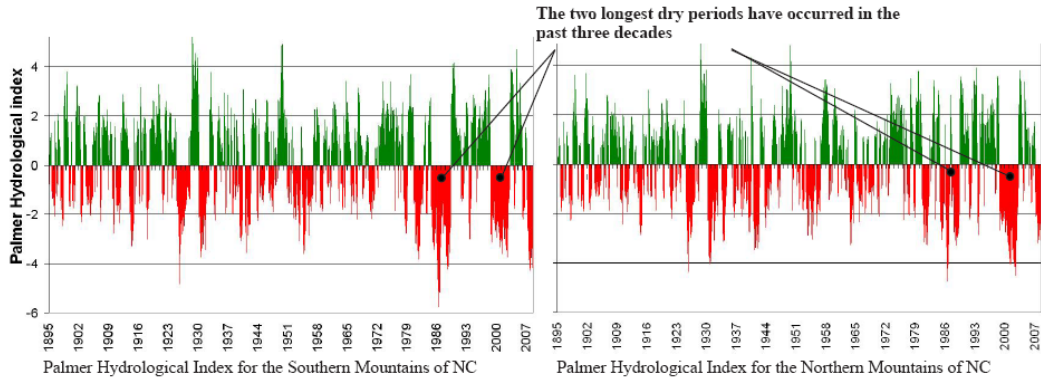


HURRICANE TRACKS



Clear & Compelling

Precipitation Patterns Climate Change

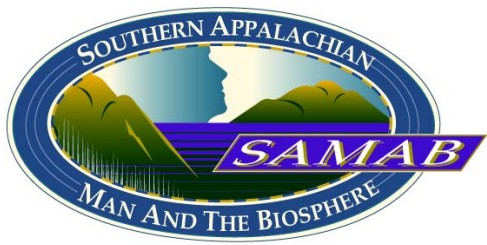


Average precipitation has remained constant over the past century.

Clear & Compelling



Actionable



SAMAB Climate Change Conference, November, 2009

- **Value** of Natural Systems (Resources and Services)
 - Water quality
 - Carbon sequestration
 - Flood storage
 - Local food supplies
- Natural Systems do not pay attention to jurisdictional boundaries
 - Must be managed on a regional scale
- **Natural systems are less resilient to rapid climate change**
- Land Use and Planning Issues
 - Planning process must integrate natural systems to create sustainable human communities

Actionable

Our society will not make decisions based **solely** on Climate Change



Water Resources



Development Pressure

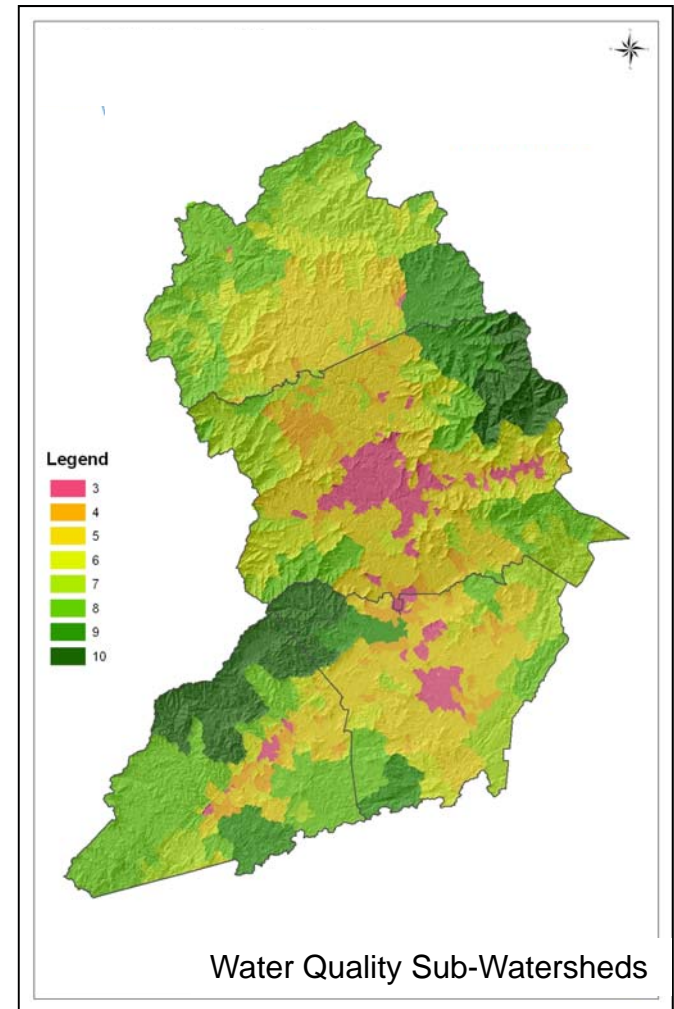
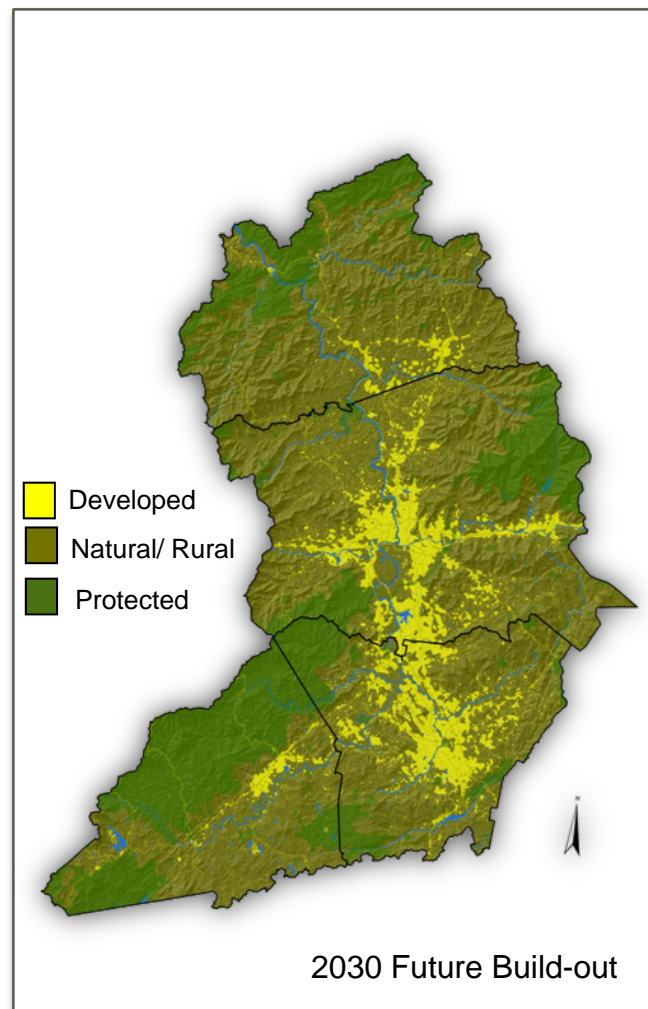


Escalating Energy Costs

- People must be able to integrate Climate Change information with other value drivers
- Adaptation planning leads to resiliency
- Prioritization will be our challenge

Actionable

Ecosystem Services



- You can't manage the water without managing the land
- Regional planning tool tied to Green Infrastructure
- Sub-watersheds in the upper end of the basin and with little impervious surface hold greater value

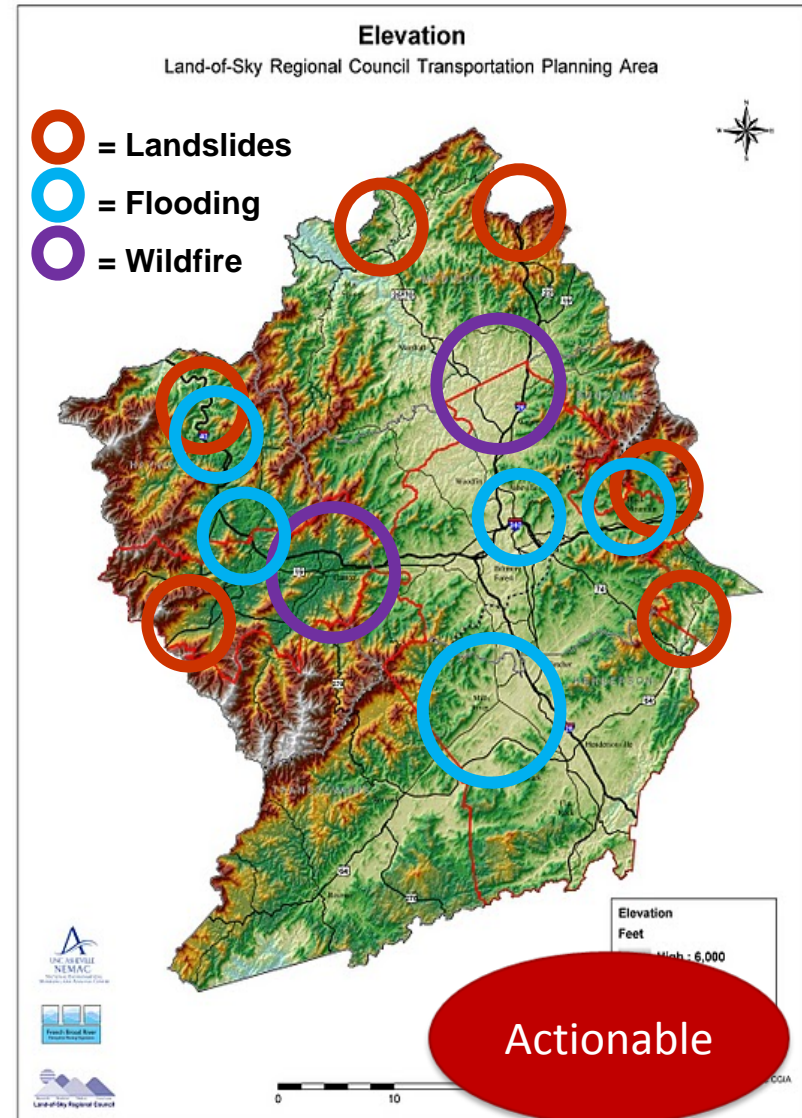
Actionable

LAND OF SKY (ASHEVILLE AREA) TRANSPORTATION SECTOR

*Climate Assessment leading to a
Vulnerability Assessment*

Pinch-Points:

- I-40 Landslide



From Data to Decisions

Integration of Data



GIS – Spatial
Images
Text
Data Feeds

Consistent

Creating Visualizations



Science
Multimedia
Delivery
Technologies

Clear &
Compelling

Telling the Story



Communications
Education
Narrative
Story Board

Fits the
audience
specific N

Actionable

Group Decision Making



Listening
Recording
Scenarios
Uncertainty

Supports the
Decision
ing Process

Thank You

Jim Fox

jfox@unca.edu

UNC Asheville's NEMAC